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THE FINE AND INDUSTRIAL ARTS IN ELEMENTARY SCHOOLS, GRADES II AND III

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Children who attend schools where instructors encourage drawing and constructive work as an everyday means of expression usually gain remarkable facility during the first year in setting forth their ideas by these means. Through their own invention and the suggestions of the teacher and of their fellow-pupils, they gain command of a wide variety of graphic symbols and simple constructive processes. Expression by means of illustration and construction becomes a matter of course and is carried on with comparative ease.

A change in attitude toward the results is apparent, however, as the children grow older. They soon cease to be wholly satisfied with manual expression as a mere activity without regard to the quality of the product. When during the first year in school the child's impulse to produce something had found an outlet in lines or shapes, the crudity of the result seldom interfered with his exultation as he displayed his production, or caused him to pause before he proceeded to his next attempt. In Grades II and III the product as a product seems to make an impression on the children and gain importance in their estimation. They show indications of caring for the truth of the representation and the quality of the construction, and wish greater knowledge and more adequate means for carrying out their ideas. This newly awakened desire is illustrated by such instances as the announcement of a child who was attempting to represent a ship at sea, that he was going to find some pictures of ships in order that he might know more definitely how the prow of a ship was shaped so he could draw his as it should be. Children who were making nature drawings inquired how to make the bulbs look "round," how to make some leaves look as if they were behind others, how to paint a white narcissus on white paper.

This realization of the need of data in order to represent adequately, and of knowledge of how to put material together if the product is to be satisfactory, offers opportunity to give instruction which the children desire for immediate use and which at the same time enriches their ideas and extends their knowledge of shapes, materials, and processes, and is the guiding suggestion for methods of teaching during these two years.

Based largely on this suggestion, work of the following general character along the lines of representation, construction, and design is recommended as appropriate for children during the second and third years in school.

Representation.—The freedom and facility already gained in drawing make possible a more adequate graphic expression, and the interest of the children in the quality of the results makes worth while a more careful study of objects than was valuable during the first year. A somewhat intensive study of a few typical things conducted by devoting a series of lessons to each, for the purpose of enabling the children to draw these particular things well, is especially adapted to these grades. Such study frees the drawing from some of its crudity and begins the kind of observation which should result later in correct impressions and the ability to record them with some degree of accuracy. Children at this age progress rapidly when they work for several consecutive lessons upon the same topic, expressing it each time in a different way.

For example, if the subject under consideration is a house, after the children have done their best in representing it, attention may be called to particular and significant points: for instance, the desirability that the sides of a house stand vertically. They should examine the houses they are drawing to see if any of them lean. They readily become interested in this geometric relation and will work earnestly over houses on paper and blackboard, in the endeavor to make the sides of the house and its doors, windows, and chimneys exactly vertical. They are then eager to draw villages in which every house stands upright and where fences, poles, etc., are in proper position.

Later they may study houses and pictures of houses to see how gables are shaped, how doors and windows are placed, how chimneys join roofs, etc. They may cut pictures of houses from paper or trace them, and by actual muscular movements over the shapes, gain a clearer perception of them. They may cut patterns for the construction of houses in paper or cardboard and may build houses in the sandbox, which shall embody the ideas thus far gained.

If the material out of which the house is constructed is of particular interest, as in the case of a log house, the problem of learning how to represent this becomes a topic for study.

Again, if the subject for illustration is a bird, the first drawing may be followed by a study of the shape of the bird's head, the way his feet are placed upon the ground, the angle at which he stands. The bird may be drawn on paper, modeled in clay, cut from paper, painted or drawn in color. Pictures may be collected illustrating the bird in various positions and activities, and some of these may be traced and cut out. After a child has gained what he can from observation and his progress in representing a given object seems to have reached its limit for the time, the tracing of good pictures of the object often gives a fresh impulse to his expression. The tendency of tracing when not used with discrimination to become a hindrance to original observation has often prevented teachers from availing themselves of its great value as an occasional stimulation.

After a few lessons the children master the general shape and characteristics of the bird so they can illustrate any story which admits of interpretation in terms of that bird and its activities, and the drawings are informed with all the details and data gained in the several steps.

The interest of the children increases with successive lessons if each presents some new phase. There is a familiar background to which to refer new elements. At first the children are likely to make their drawings much alike. After absorbing items of detail from pictures and objects their productions show great variety and a marked advance in definiteness of shape, correctness of general proportions, and expressiveness of character.

The important advantage of the cumulative effect of a number of consecutive lessons on the same topic is often overlooked, and as a result drawing frequently fails to show definite progress and either ceases to interest or becomes so much a matter of superficial facility that children miss the stimulation that comes with a measurably thorough mastery of a subject. Advancement in ability to draw seems to become evident, not at first in gradual increase of power to draw anything that may be presented, but in learning how to draw one thing after another and thus accumulating a graphic vocabulary.

The interest that is evident when a group of children work together on a single topic, developing the description as they proceed, is a factor that should be utilized. For example, when an illustration of some topic in which the children are interested is started on the board, all are generally enthusiastic in contributing a share to the result. Such topics as are suggested by the school work or outside interests, such as a farm, a city street, a wharf, a market, a harvest field, etc., are excellent. The children show great resourcefulness in composing the scene and offering additional material, and after the first rapid sketching is done they are ready to collect data for correction and improvement of the results.

Constructive work.—Part of the constructive work may with advantage parallel the work in drawing, so that the same things which are being represented in two dimensions may also be constructed in three. That such a relation enriches the value of both means of expression is shown by the increased understanding of form reflected by the drawings, when the same objects are being constructed, and by the amount of data and suggestion which is secured by drawing and embodied in the construction. Such problems as houses, furniture, and the various articles related to studies, games, and occupations, are continually presenting themselves and offer an abundant list of topics.

In most manual problems drawing and construction are both involved in the final result.

In addition to free, illustrative construction, these grades should also present the first steps in well-planned work which requires careful measurements and exact delineation of patterns. This means the beginning of working drawings. During the first year most of the paper cutting that demanded an approach to exact following of a predetermined shape was based upon outlines furnished to the children, such as pictures and patterns. Now the children should begin to make their own patterns and should come to appreciate the value of the rule as an instrument for determining measurements and straight lines with precision. It is not difficult to awaken and maintain interest in the accurate use of the rule if the problems presented involve at first only a few lines and measurements of even inches and later half and quarter inches. The rule used by the children during these years should not contain smaller divisions than quarter inches and the children should be shown how to manipulate it and should be interested in maintaining a relatively high standard of accuracy whenever the work departs from freehand expression and requires an instrument of accuracy.

Bookmarks, tags, weather signals, flags, pin wheels, covers, envelopes and folders for school work, illustrative diagrams such as plans for school gardens, and other projects of this sort give opportunity for planning objects by simple patterns in the flat.

It is important that during these two years a few fundamental geometric relations should be thoroughly apprehended by repeated use. The relations of vertical, horizontal, and parallel are involved in such drawing and construction as the house already suggested. The right angle should also be mastered, so it can be drawn freehand in any position.

In addition to the subjects involving these relations some drill work repeated at frequent intervals is necessary to insure the complete mastery of these relations and ease and confidence in using them. In the third grade such drill may be undertaken with good results. For example, when lines are drawn on the board at various angles, children are interested in trying to draw other lines forming right angles with these, and in testing the results with a cardboard square, or in drawing lines parallel to the given lines and testing their equidistance. They also like to accompany their freehand drawing and construction with occasional drawings of vertical lines on the board, holding the chalk at arm's length and producing the line slowly and steadily to a length of two or three feet and then testing the direction with a plumb line. Horizontal lines and lines to represent given slants should also receive attention. It is of great importance that these geometric relations should be thoroughly mastered so that they may be used with facility. The mind has then an established sense of fundamental relations and a standard for estimating and comparing variations from these.

Design.—The general lines of work suggested for Grade I continue through Grades II and III with higher standards of accomplishment. The problems involve planning simple forms to be constructed and decorating them with suitable ornamentation: such objects as holiday greetings and souvenirs, book marks, valentines, covers for school papers, etc. The decorations may consist of units and borders which the children readily invent by placing pegs and lentils, afterward selecting and drawing the best of these arrangements. The invention of the children at this age can easily be directed along the lines of good types of design by the example of the teacher. Leadership which, by example, directs inventive activities along right lines at first, obviates the necessity of much of that correction and verbal instruction which sometimes seems necessary later if poor arrangements have become fixed in the mind.

The children should continue the rhythmic drawing of borders by repeating units to a time count corresponding somewhat to that of music. After the experience of the first year they are usually able to use more difficult units, to draw them with excellent spacing, and to use them in making decorative borders and simple surface patterns upon the forms they have constructed, employing no other measurements than those rapidly estimated by the eye as the drawing proceeds.

During the second year the children should learn to discriminate hues of color more exactly than in the first year, and should be able to pick out objects the colors of which are more nearly like the samples shown by the teacher. In the third year they may with advantage learn to distinguish color values. The word value is used here to denote the relation of a color to light and dark. In this significance of the term the value of a color changes as the color grows lighter or darker. For example, if white is mixed with green the resulting lighter green is higher in value. If black instead of white is mixed with it the resulting darker color is lower in value than the original green. Children may collect or be furnished with an abundance of color samples and, after selecting those of one color hue, e. g., blue, arrange these so as to form a series of different values, ranging from light blues which are almost white to those which approach black. In a similar manner they may arrange value scales of other colors. Any great degree of accuracy in these arrangements should not be demanded, nor should the number of steps between the lightest and darkest be so many that the children cannot readily perceive the change from one step to another. Five steps between lightest and darkest are sufficient to illustrate fairly well the effects of various values, while seven are as many as can be appreciated by most children in these grades.

Many of the designs made by the children call for color combinations and give opportunity to use the effects of different steps of value in pleasing combinations.

Young children can use water colors to excellent advantage, but during the first three years about all the color expression that is valuable can be secured by collections of samples and by the use of colored crayons. The disadvantages of postponing the use of water colors till the fourth year are probably more than compensated for by the fresh stimulation from the introduction of a new medium at that time, and by the fact that the results obtained by primary children in water colors, which are admired by adults, are almost always chance effects caused by the fluid character of the medium and were unforeseen by the child. Experimentation with accidental color effects has a definite value but this value is perhaps greater when the experimenter is somewhat more mature and less likely to gain the idea that careless ventures which may turn out to be pleasing, are more worth while and likely to receive greater recognition than purposeful effort.

A reasonable standard of accomplishment has been reached if at the end of the third year in school the children, in addition to increased facility in drawing, have also added to their resources of expression a somewhat definite knowledge of a few typical objects and have fixed in mind certain fundamental geometric relations such as vertical, perpendicular, horizontal, and parallel, not as definitions but as means of comprehending and expressing form; if they have developed their ability to embody ideas in materials, not only as a result of increased skill of hand but also because of the added power given by some command over such an aid to accuracy, foresight, and economy as a foot rule; if they have better ideas of good spacing and proportions, and an increased pleasure in ability to distribute forms over a surface in consistently related measures, and to discriminate qualities of color.

The stimulation of leadership and example of the teacher continues to be a factor of the first importance in securing these results.